CLAIMS

1. (Currently Amended) An integrated circuit (IC) chip, comprising:

a plurality of chip areas on the same chip, wherein at least one chip area is a comparison chip area and wherein the at least one comparison chip area further comprises at least one input/output ("I/O") device that is controlled to simulate other functional I/O devices on the same chip;

a plurality of temperature sensors, at least one temperature sensor per chip area; and

a comparator for comparing the output of any one of the plurality of temperature sensors with the output of any other of the plurality of temperature sensors, the comparator further employable to generate a signal if the difference between the outputs of the plurality of temperature sensors exceeds a threshold.

2. (Original) The integrated circuit of Claim 1, wherein the temperature sensor measures a temperature to generate a voltage.

3. (Original) The integrated circuit of Claim 1, wherein the temperature sensor measures a temperature to generate a current.

4. (Original) The integrated circuit of Claim 1, wherein the temperature sensor comprises a pn junction.

5. (Original) The integrated circuit of Claim 1, wherein the temperature sensor comprises a thermal resistor.

6. (Original) The integrated circuit of Claim 1, wherein the comparator is coupled to the chip.

7. (Original) The integrated circuit of Claim 1, wherein the comparator compares voltages generated from the plurality of temperature sensors.

8. (Currently Amended) The integrated circuit of Claim 1, further comprising a layer of silicon dioxide interposed between ~~the~~ a substrate of the integrated circuit and a computational element of the integrated circuit.

9. (Currently Amended) An integrated circuit, comprising:

a plurality of chip areas on the same chip, at least one chip area employed as a ~~simulation~~ comparison area, wherein the at least one comparison chip area further comprises at least one I/O device that is controlled to simulate other functional I/O devices on the same chip;

a plurality of temperature sensors, at least one temperature sensor per chip area; and

a comparator for comparing the output of any one of the plurality of temperature sensors with the temperature sensor in the comparison ~~simulation~~ area.

10. (Currently Amended) The integrated circuit of Claim 9, further comprising a layer of silicon dioxide interposed between ~~the~~ a substrate of the integrated circuit and a computational element of the integrated circuit.

11. (Previously Presented) The integrated circuit of Claim 9, wherein the temperature sensor measures a temperature to generate a current.

12. (Original) The integrated circuit of Claim 9, wherein the temperature sensor measures a temperature to generate a voltage.

13. (Original) The integrated circuit of Claim 9, wherein the temperature sensor comprises a pn junction.

14. (Original) The integrated circuit of Claim 9, wherein the temperature sensor comprises a thermal resistor.

15. (Original) The integrated circuit of Claim 9, wherein the comparator is coupled to the chip.

16. (Withdrawn) A method for determining a hot area of an integrated circuit, comprising:

reading a first temperature sensor in a first area of a chip;

reading a second temperature sensor in a second area of a chip;

comparing the readings of the first temperature sensor and the second temperature sensor; and

if the difference between the first temperature reading and the second temperature reading exceeds a threshold, indicating an error condition.

17. (Withdrawn) The method of Claim 16, further comprising:

reading a third temperature sensor in a third area of the chip, and generating a first comparison value from the difference between the reading of the first temperature sensor and the second temperature sensor;

comparing the readings of the first temperature sensor and the third temperature sensor;

generating a second comparison value from the difference between the reading of the first temperature sensor and the third temperature sensor; and

if the difference between the first comparison value and the second comparison value exceeds a threshold, indicating an error condition.

18. (Withdrawn) The method of Claim 16, further comprising:

distributing the first temperature sensor to a relative cold part of the chip, and the second temperature sensor to a relative hot part of the chip.

19. (Withdrawn) The method of Claim 15, further comprising:

distributing the first temperature sensor to a relative cold part of the chip, and the second and third temperature sensors to relative hot parts of the chip.

20. (Withdrawn) A computer program product for determining a hot area of an integrated circuit, the computer program product having a medium with a computer program embodied thereon, the computer program comprising:

computer code for reading a first temperature sensor in a first area of a chip;

computer code for reading a second temperature sensor in a second area of a chip;

computer code for comparing the readings of the first temperature sensor and the second temperature sensor; and

if the difference between the first temperature reading and the second temperature reading exceeds a threshold, computer code for indicating an error condition.

21. (Withdrawn) A processor for determining a hot area of an integrated circuit, the processor including a computer program comprising:

computer code for reading a first temperature sensor in a first area of a chip;

computer code for reading a second temperature sensor in a second area of a chip;

computer code for comparing the readings of the first temperature sensor and the second temperature sensor; and

if the difference between the first temperature reading and the second temperature reading exceeds a threshold, computer code for indicating an error condition.

22. (Currently Amended) An integrated circuit (IC) chip, comprising:

a plurality of chip areas on the same chip, wherein one chip area is employed as a ~~simulation~~ comparison area, wherein the at least one comparison chip area further comprises at least one I/O device that is controlled to simulate other functional I/O devices on the same chip;

a plurality of temperature sensors, at least one temperature sensor per chip area, each temperature sensor generating an output having a distinct temperature-versus-output conversion characteristic wherein the output is proportional to the measured temperature; and

a comparator for comparing the output of any one of the plurality of temperature sensors with the output of any other of the plurality of temperature sensors, the comparator generating a signal in response to the difference between the outputs of the plurality of temperature sensors exceeding a threshold, wherein the comparator compensates for differing temperature-versus-output conversion characteristics between any two of the plurality of temperature sensors.